SECTION MA
MAINTENANCE

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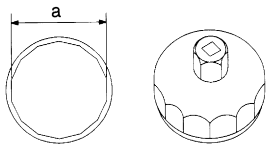
PREPARATION

PFP:00002

Special Service Tools

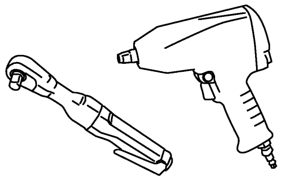
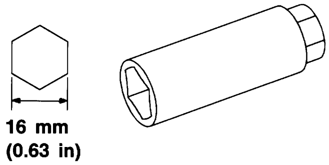
ALS000RV

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J-38956) Oil filter wrench  S-NT375	Removing and installing oil filter **a: 64.3 mm (2.531 in)**

Commercial Service Tools

ALS000RW

(Kent-Moore No.) Tool name	Description
(—) Power tool  PBIC0190E	Loosening nuts and bolts
(—) Spark plug wrench  S-NT047	Removing and installing spark plug

A B C D E F G H I J K MA M

GENERAL MAINTENANCE

PFP:00000

Explanation of General Maintenance

ALS000RX

General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their NISSAN dealers do them.

OUTSIDE THE VEHICLE

The maintenance items listed here should be performed from time to time, unless otherwise specified.

Item		Reference page
Tires	Check the pressure with a gauge, including the spare, at least once a month and always prior to a long distance trips. Adjust to the specified pressure if necessary. Check carefully for damage, cuts or excessive wear.	—
Wheel nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	—
Windshield	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
Tire rotation	Tires should be rotated every 12,000 km (7,500 miles).	MA-24
Wheel alignment and balance	If the vehicle pulls to either side while driving on a straight and level road, or if you detect uneven or abnormal tire wear, there may be a need for wheel alignment. If the steering wheel or seat vibrates at normal highway speeds, wheel balancing may be needed.	MA-23, FSU-6
Windshield wiper blades	Check for cracks or wear if they do not wipe properly.	—
Doors and engine hood	Check that all doors and the engine hood operate smoothly as well as the back hatch. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check lubrication frequently.	MA-28
Lamps	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim. Clean the headlamps on a regular basis.	—

INSIDE THE VEHICLE

The maintenance items listed here should be checked on a regular basis, such as when performing periodic maintenance, cleaning the vehicle, etc.

Item		Reference page
Warning lamps and chimes	Make sure that all warning lamps and chimes are operating properly.	—
Windshield wiper and washer	Check that the wipers and washer operate properly and that the wipers do not streak.	—
Windshield defroster	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioner.	—
Steering wheel	Check that it has the specified play. Be sure to check for changes in the steering condition, such as excessive play, hard steering or strange noises. **Free play: Less than 35 mm (1.38 in)**	—
Seats	Check seat position controls such as seat adjusters, seatback recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restrains move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seatbacks.	—
Seat belts	Check that all parts of the seat belt system (e.g. buckles, anchors, adjusters and retractors) operate properly and smoothly, and are installed securely. Check the belt webbing for cuts, fraying, wear or damage.	MA-28
Clutch pedal	Make sure the pedal operates smoothly and check that it has proper clearance.	CL-5
Accelerator pedal	Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—

Item		Reference page
Brakes	Check that the brake does not pull the vehicle to one side when applied.	—
Brake pedal and booster	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully. Check the brake booster function. Be sure to keep the floor mats away from the pedal.	BR-6, BR-21
Parking brake	Check that the lever has the proper travel and make sure that the vehicle is held securely on a fairly steep hill when only the parking brake is applied.	PB-2
Automatic transmission P (Park) position mechanism	Check that the lock release button on the selector lever operates properly and smoothly. On a fairly steep hill check that the vehicle is held securely with the selector lever in the P (Park) position without applying any brakes.	—

UNDER THE HOOD AND VEHICLE

The maintenance items listed here should be checked periodically (e.g. each time you check the engine oil or refuel).

Item		Reference page
Windshield washer fluid	Check that there is adequate fluid in the tank.	—
Engine coolant level	Check the coolant level when the engine is cold.	MA-12
Radiator and hoses	Check the front of the radiator and clean off any dirt, insects, leaves, etc., that may have accumulated. Make sure the hoses have no cracks, deformation, deterioration or loose connections.	—
Brake and clutch fluid levels	Make sure that the brake and clutch fluid levels are between the “MAX” and “MIN” lines on the reservoirs.	MA-19, MA-25
Battery	Check the fluid level in each cell. It should be between the “MAX” and “MIN” lines. Vehicles operated in high temperatures or under severe conditions require frequent checks of the battery fluid level.	—
Engine drive belts	Make sure that no belt is frayed, worn, cracked or oily.	MA-12
Engine oil level	Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine.	MA-15
Power steering fluid level and lines	Check the level on the dipstick with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	MA-26
Exhaust system	Make sure there are no loose supports, cracks or holes. If the sound of the exhaust seems unusual or there is a smell of exhaust fumes, immediately locate the trouble and correct it.	MA-19
Underbody	The underbody is frequently exposed to corrosive substances such as those used on icy roads or to control dust. It is very important to remove these substances, otherwise rust will form on the floor pan, frame, fuel lines and around the exhaust system. At the end of winter, the underbody should be thoroughly flushed with plain water, being careful to clean those areas where mud and dirt can easily accumulate.	—
Fluid leaks	Check under the vehicle for fuel, oil, water or other fluid leaks after the vehicle has been parked for a while. Water dripping from the air conditioner after use is normal. If you should notice any leaks or gasoline fumes are evident, check for the cause and correct it immediately.	—

PERIODIC MAINTENANCE

PFP:00026

Introduction of Periodic Maintenance

ALS000RY

Two different maintenance schedules are provided, and should be used, depending upon the conditions in which the vehicle is mainly operated. **After 60,000 miles (96,000 km) or 48 months, continue the periodic maintenance at the same mileage/time intervals.**

Schedule 1	Follow Periodic Maintenance Schedule 1 if the driving habits frequently include one or more of the following driving conditions: ● Repeated short trips of less than 5 miles (8 km). ● Repeated short trips of less than 10 miles (16 km) with outside temperatures remaining below freezing. ● Operating in hot weather in stop-and-go “rush hour” traffic. ● Extensive idling and/or low speed driving for long distances, such as police, taxi or door-to-door delivery use. ● Driving in dusty conditions. ● Driving on rough, muddy, or salt spread roads. ● Towing a trailer, using a camper or a car-top carrier.	Emission Control System Maintenance	MA-7
		Chassis and Body Maintenance	MA-8
Schedule 2	Follow Periodic Maintenance Schedule 2 if none of driving conditions shown in Schedule 1 apply to the driving habits.	Emission Control System Maintenance	MA-8
		Chassis and Body Maintenance	MA-9

Schedule 1

ALS000RZ

EMISSION CONTROL SYSTEM MAINTENANCE

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary. [ ]: At the mileage intervals only

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Drive belts	NOTE (1)									MA-12
Air cleaner filter	NOTE (2)								[R]	MA-14
EVAP vapor lines									I*	MA-18
Fuel lines									I*	MA-14
Fuel filter	NOTE (3)									-
Engine coolant	NOTE (4)									MA-12
Engine oil		R	R	R	R	R	R	R	R	MA-15
Engine oil filter (Use part No. 15208 31U00 or 15208 65F00 or equivalent.)		R	R	R	R	R	R	R	R	MA-16
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								MA-17
Intake & exhaust valve clearance*	NOTE (5)									EM-46, "Valve Clearance"

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Drive belts	NOTE (1)								I*	MA-12
Air cleaner filter	NOTE (2)								[R]	MA-14
EVAP vapor lines									I*	MA-18
Fuel lines									I*	MA-14
Fuel filter	NOTE (3)									-
Engine coolant	NOTE (4)								R*	MA-12
Engine oil		R	R	R	R	R	R	R	R	MA-15
Engine oil filter (Use part No. 15208 31U00 or 15208 65F00 or equivalent.)		R	R	R	R	R	R	R	R	MA-16
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								MA-17
Intake & exhaust valve clearance*	NOTE (5)									EM-46, "Valve Clearance"

NOTE:

(1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months. Replace the drive belts if found damaged or if the auto belt tensioner reading of QR25DE engine reaches the maximum limit.

(2) If operating mainly in dusty conditions, more frequent maintenance may be required.

(3) Maintenance-free item. For service procedures, refer to FL section.

(4) After 60,000 miles (96,000 km) or 48 months, replace every 30,000 miles (48,000 km) or 24 months.

(5) If valve noise increases, inspect valve clearance.

* Maintenance items and intervals with “*” are recommended by NISSAN for reliable vehicle operation. The owner need not perform such maintenance in order to maintain the emission warranty or manufacturer recall liability. Other maintenance items and intervals are required.

CHASSIS AND BODY MAINTENANCE

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Brake lines & cables					I				I	MA-25
Brake pads & rotors			I		I		I		I	MA-25
Automatic transaxle fluid, manual transaxle gear oil, transfer oil & differential gear oil	NOTE (1)				I				I	MA-20, MA-19 , MA-21 , MA-22
Steering gear & linkage, axle & suspension parts			I		I		I		I	MA-26, MA-27
Tire rotation	NOTE (2)									MA-4, MA-24
Drive shaft boots and propeller shaft (AWD models)			I		I		I		I	MA-27, MA-22
Exhaust system			I		I		I		I	MA-19
In-cabin microfilter					R				R	ATC-108, MTC-67

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Brake lines & cables					I				I	MA-25
Brake pads & rotors			I		I		I		I	MA-25
Automatic transaxle fluid, manual transaxle gear oil, transfer oil & differential gear oil	NOTE (1)				I				I	MA-20, MA-19 , MA-21 , MA-22
Steering gear & linkage, axle & suspension parts			I		I		I		I	MA-26, MA-27
Tire rotation	NOTE (2)									MA-4, MA-24
Drive shaft boots and propeller shaft (AWD models)			I		I		I		I	MA-27, MA-22
Exhaust system			I		I		I		I	MA-19
In-cabin microfilter					R				R	ATC-108, MTC-67

NOTE:

(1) If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, change (not just inspect) oil at every 30,000 miles (48,000) or 24 months.

(2) Refer to “Tire rotation” under the “General maintenance” heading earlier in this section.

Schedule 2

ALS000S0

EMISSION CONTROL SYSTEM MAINTENANCE

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary. [ ]: At the mileage intervals only

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Drive belts	NOTE (1)								I*	MA-12
Air cleaner filter					[R]				[R]	MA-14
EVAP vapor lines					I*				I*	MA-18

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Fuel lines					I*				I*	MA-14
Fuel filter	NOTE (2)									-
Engine coolant	NOTE (3)								R*	MA-12
Engine oil		R	R	R	R	R	R	R	R	MA-15
Engine oil filter (Use part No. 15208 31U00 or 15208 65F00 or equivalent.)		R	R	R	R	R	R	R	R	MA-16
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								MA-17
Intake & exhaust valve clearance*	NOTE (4)									EM-46, "Valve Clearance"

NOTE:

(1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months. Replace the drive belts if found damaged (or if auto belt tensioner reading reaches maximum limit).

(2) Maintenance-free item. For service procedures, refer to FL section.

(3) After 60,000 miles (96,000 km) or 48 months, replace every 30,000 miles (48,000 km) or 24 months.

(4) If valve noise increases, inspect valve clearance.

* Maintenance items and intervals with “*” are recommended by NISSAN for reliable vehicle operation. The owner need not perform such maintenance in order to maintain the emission warranty or manufacturer recall liability. Other maintenance items and intervals are required

CHASSIS AND BODY MAINTENANCE

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Brake lines & cables			I		I		I		I	MA-25
Brake pads & rotors			I		I		I		I	MA-25
Automatic transaxle fluid, manual transaxle gear oil, transfer oil & differential gear oil			I		I		I		I	MA-20, MA-19 , MA-21 , MA-22
Steering gear & linkage, axle & suspension parts					I				I	MA-26, MA-27
Tire rotation	NOTE (1)									MA-4, MA-24
Drive shaft boots and propeller shaft (AWD models)			I		I		I		I	MA-27, MA-22
Exhaust system					I				I	MA-19
In-cabin microfilter			R		R		R		R	ATC-108, MTC-67

NOTE:

(1) Refer to “Tire rotation” under the “General maintenance” heading earlier in this section.

RECOMMENDED FLUIDS AND LUBRICANTS

PFP:00000

Fluids and Lubricants

ALS000S1

		Capacity (Approximate)			Recommended Fluids/Lubricants
		US measure	Imp measure	Liter	
Engine oil Drain and refill	With oil filter change	4-1/8 qt	3-3/8 qt	3.9	● API Certification Mark*1 ● API grade SG/SH, Energy Conserving I & II or API grade SJ or SL, Energy Conserving*1 ● ILSAC grade GF-I, GF-II & GF-III *1
	Without oil filter change	3-3/4 qt	3-1/8 qt	3.5	
Dry engine (Overhaul)		4-3/4 qt	4 qt	4.5	
Cooling system	With reservoir tank	7-1/2 qt	6-1/4 qt	7.1	Genuine NISSAN Long Life Antifreeze/Coolant or equivalent
	Reservoir tank	3/4 qt	5/8 qt	0.7	
Manual transaxle gear oil		2-3/8 qt	2 qt	2.2	Genuine NISSAN Manual Transmission fluid (MTF) HQ Multi 75W-85 or API GL-4, Viscosity SAE 75W-85
Automatic transaxle fluid		9 qt	7-1/2 qt	8.5	NISSAN Automatic Transmission Fluid (ATF), DEXRON™ III/ MERCON™ , or equivalent ATF
Differential gear oil		1-1/8 pt	1 pt	0.55	API GL-5, Viscosity SAE 80 W-90 *2
Transfer oil		5/8 pt	1/2 pt	0.31	API GL-5, Viscosity SAE 80 W-90
Power steering fluid (PSF)		1-1/8 qt	7/8 qt	1.0	Genuine NISSAN PSF or equivalent*3
Brake and clutch fluids		—	—	—	DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid		—	—	—	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze Fluid or equivalent
Fuel recommendation		—	—	—	Refer to GI-5, "Precautions for Fuel (Unleaded Regular Gasoline Recommended)" .

*1: For further details, see “SAE Viscosity Number”.

*2: For hot climates, viscosity SAE 90 is suitable for ambient temperatures above 0°C (32°F).

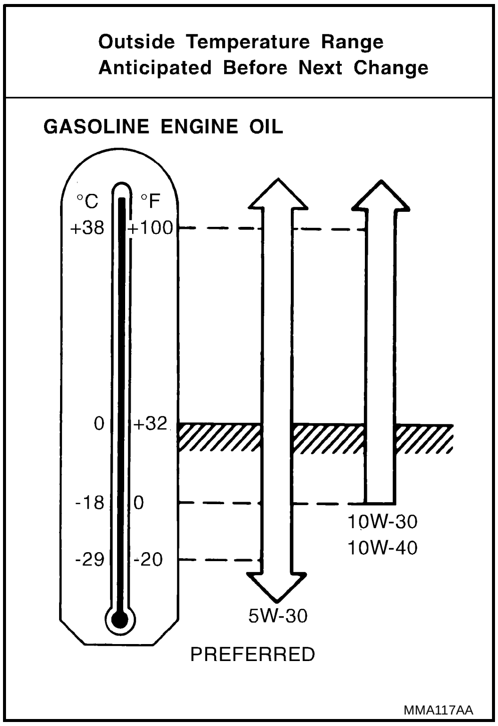
*3:NISSAN Automatic Transmission Fluid (ATF), DEXRON™ III/ MERCON™ or equivalent ATF may also be used.

SAE Viscosity Number

ALS000S2

GASOLINE ENGINE OIL

SAE 5W-30 viscosity oil is preferred for all temperatures. SAE 10W-30 and 10W-40 viscosity oil may be used if the ambient temperature is above -18°C(0°F)



Anti-Freeze Coolant Mixture Ratio

ALS000S3

The engine cooling system is filled at the factory with a high-quality, year-round, anti-freeze coolant solution. The anti-freeze solution contains rust and corrosion inhibitors. Therefore, additional cooling system additives are not necessary.

CAUTION:

When adding or replacing coolant, be sure to use only Genuine NISSAN Long Life Antifreeze/Coolant or equivalent with the proper mixture ratio of 50% anti-freeze and 50% demineralized water/distilled water.

Other types of coolant solutions may damage your cooling system.

Outside temperature down to		Anti-freeze	Demineralized water or distilled water
°C	°F		
–35	–30	50%	50%

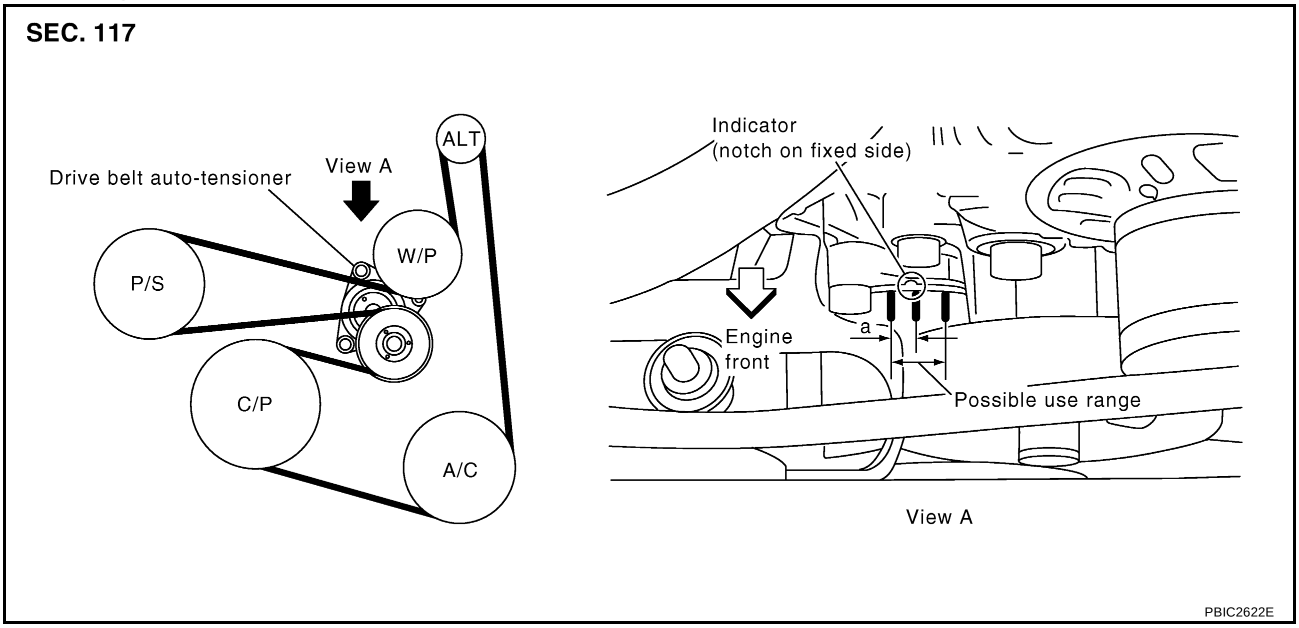
SMA947CA

ENGINE MAINTENANCE

PFP:00000

Checking Drive Belt

ALS000S4



WARNING:

Be sure to perform this step when the engine is stopped.

- Make sure that the indicator (notch on fixed side) of drive belt auto-tensioner is within the possible use range (between three line notches on moving side).

  NOTE:
  - Check the drive belt auto-tensioner indication when the engine is cold.
  - When new drive belt is installed, the indicator (notch on fixed side) should be within the range “a” in the figure.
- Visually check entire drive belt for wear, damage or cracks.
- If the indicator (notch on fixed side) is out of the possible use range or belt is damaged, replace drive belt.

Tension Adjustment

ALS000S5

Belt tensioning is not necessary, as it is automatically adjusted by drive belt auto-tensioner.

Changing Engine Coolant

ALS000S6

WARNING:

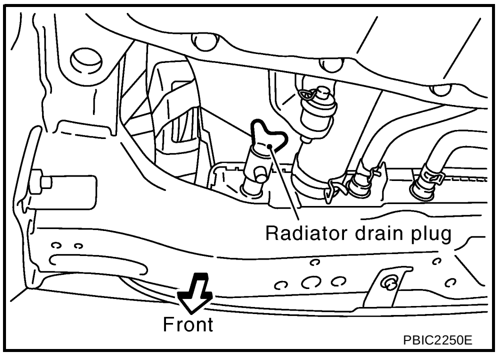
- **To avoid being scalded, do not change engine coolant when the engine is hot.**
- **Wrap a thick cloth around radiator cap and carefully remove the cap. First, turn the cap a quarter of a turn to release built-up pressure. Then turn the cap all the way.**

CAUTION:

Be careful not to allow engine coolant to contact drive belt.

DRAINING ENGINE COOLANT

1. Remove RH and LH undercovers.
2. Open radiator drain plug at the bottom of radiator, and then remove radiator cap.



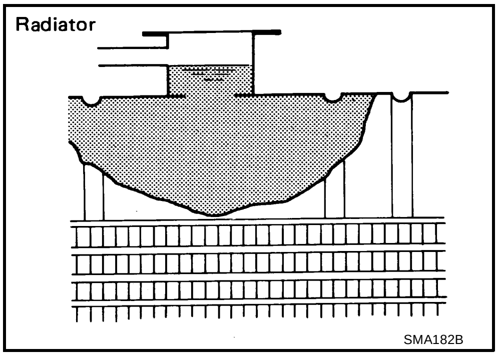
When drain all of engine coolant in the system, open water drain plug on cylinder block. Refer to EM-82, "CYLINDER BLOCK" .

3. Remove reservoir tank as necessary, and drain engine coolant and clean reservoir tank before installing.
4. Check drained engine coolant for contaminants such as rust, corrosion or discoloration. If contaminated, flush the engine cooling system. Refer to MA-14, "FLUSHING COOLING SYSTEM" .

REFILLING ENGINE COOLANT

1. Install reservoir tank if removed, and radiator drain plug.

   CAUTION:
   Be sure to clean drain plug and install with new O-ring.
   If water drain plug on cylinder block is removed, close and tighten it. Refer to EM-82, "CYLINDER BLOCK" .
2. Make sure that each hose clamp has been firmly tightened.
3. Fill radiator and reservoir tank to the specified level.
   - **Pour engine coolant through engine coolant filler neck slowly of less than 2 ℓ (2-1/8 US qt, 1-3/4 Imp qt) a minute to allow air in system to escape.**
   - **Use Genuine NISSAN Long Life Antifreeze/ Coolant or equivalent mixed with water (distilled or demineralized). Refer to MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS" .**



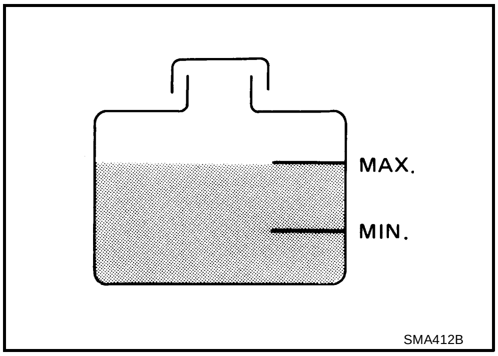
SMA182B

Engine coolant capacity (With reservoir tank at “MAX” level)

: Approx. 7.1 ℓ (7-1/2 US qt, 6-1/4 Imp qt)

Reservoir tank engine coolant capacity (At “MAX” level)

: 0.7 ℓ (3/4 US qt, 5/8 Imp qt)



SMA412B

4. Install radiator cap.
5. Warm up until opening thermostat and water control valve. Standard for warming-up time is approximately 10 minutes at 3,000 rpm.
   - Make sure thermostat opening condition by touching radiator hose (lower) to see a flow of warm water.

   CAUTION:
   Watch water temperature gauge so as not to overheat the engine.
6. Stop the engine and cool down to less than approximately 50°C (122°F).
   - Cool down using fan to reduce the time.
   - If necessary, refill radiator up to filler neck with engine coolant.
7. Refill reservoir tank to “MAX” level line with engine coolant.
8. Repeat steps 3 through 6 two or more times with radiator cap installed until the engine coolant level no longer drops.
9. Check cooling system for leaks with the engine running.
10. Warm up the engine, and check for sound of engine coolant flow while running the engine from idle up to 3,000 rpm with heater temperature controller set at several position between “COOL” and “WARM”.
    - Sound may be noticeable at heater unit.
11. Repeat step 10 three times.

12. If sound is heard, bleed air from cooling system by repeating step 3 through 6 until the engine coolant level no longer drops.

FLUSHING COOLING SYSTEM

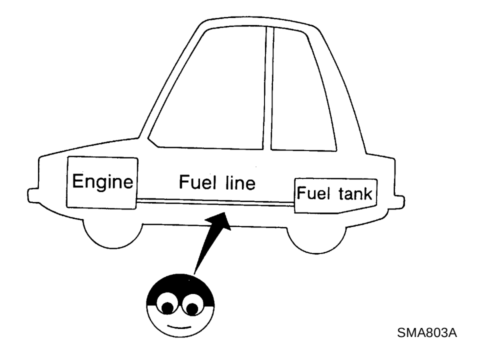
1. Install reservoir tank if removed, and radiator drain plug.

   CAUTION:
   Be sure to clean drain plug and install with new O-ring.
   If water drain plug on cylinder block is removed, close and tighten it. Refer to EM-82, "CYLINDER BLOCK" .
2. Fill radiator and reservoir tank with water and reinstall radiator cap.
3. Run the engine and warm it up to normal operating temperature.
4. Rev the engine two or three times under no-load.
5. Stop the engine and wait until it cools down.
6. Drain water from the system. Refer to MA-12, "DRAINING ENGINE COOLANT" .
7. Repeat steps 1 through 6 until clear water begins to drain from radiator.

Checking Fuel Lines

ALS000S7

Inspect fuel lines, fuel filler cap and fuel tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.
If necessary, repair or replace damaged parts.



SMA803A

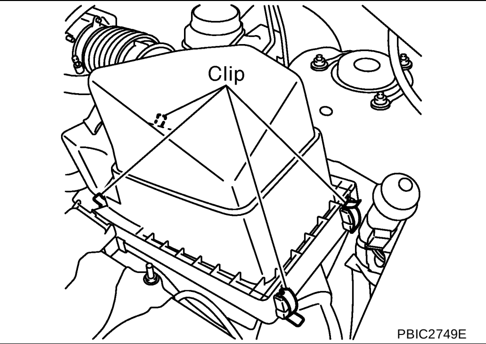
Changing Air Cleaner Filter

ALS000S8

VISCOUS PAPER TYPE

The viscous paper type filter does not need cleaning between replacement intervals. Refer to MA-6, "PERIODIC MAINTENANCE" .

1. Unfasten clips and lift up air cleaner case upper.
2. Remove air cleaner filter.



PBIC2749E

Changing Engine Oil

ALS000S9

WARNING:

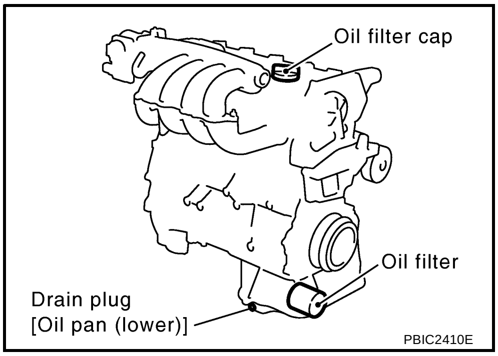
- **Be careful not to burn yourself, as engine oil may be hot.**
- **Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used engine oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.**

1. Warm up the engine, put the vehicle horizontally and check for oil leakage from the engine components. Refer to LU-6, "ENGINE OIL LEAKAGE" .
2. Stop the engine and wait for 10 minutes.
3. Loosen oil filler cap and then remove drain plug.
4. Drain engine oil.
5. Install drain plug with new washer. Refer to EM-22, "OIL PAN AND OIL STRAINER" .

   CAUTION:
   Be sure to clean drain plug and install with new washer.

   Oil pan drain plug:

   : 34.3 N·m (3.5 kg-m, 25 ft-lb)



6. Refill with new engine oil.
   Engine oil specification and viscosity:
   Refer to MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS" .

   Engine oil capacity (Approximate):

Unit: ℓ (US qt, Imp qt)

Drain and refill	With oil filter change	3.9 (4-1/8, 3-3/8)
	Without oil filter change	3.5 (3-3/4, 3-1/8)
Dry engine (Overhaul)		4.5 (4-3/4, 4)

CAUTION:

- **The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.**
- **Always use oil level gauge to determine the proper amount of engine oil in the engine.**

7. Warm up the engine and check area around drain plug and oil filter for oil leakage.
8. Stop the engine and wait for 10 minutes.
9. Check the engine oil level. Refer to LU-6, "ENGINE OIL LEVEL" .

A B C D E F G H I J K MA M

Changing Oil Filter

ALS000SA

REMOVAL

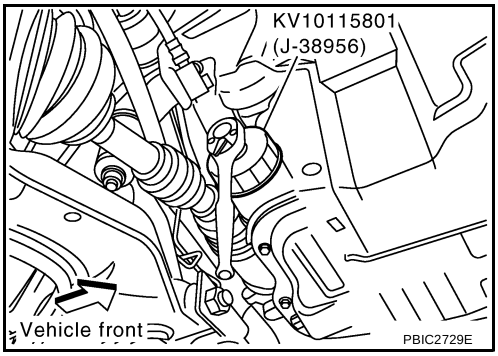
WARNING:

Be careful not to get burned when the engine and engine oil may be hot.

1. Open oil filter installation/removal cover on RH undercover.
2. Using the oil filter wrench [SST], remove oil filter.

   CAUTION:

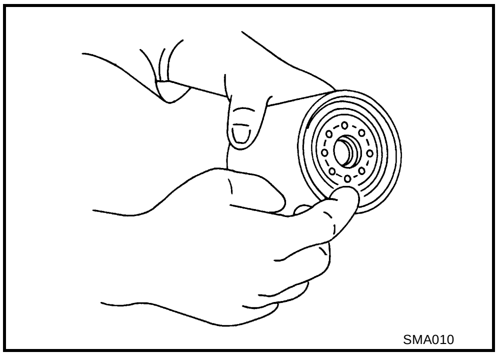
   - **Oil filter is provided with relief valve. Use Genuine Nissan Oil Filter or equivalent.**
   - **When removing, prepare a shop cloth to absorb any engine oil leakage or spillage.**
   - **Do not allow engine oil to adhere to drive belt.**
   - **Completely wipe off any engine oil that adheres to the engine and the vehicle.**



PBIC2729E

INSTALLATION

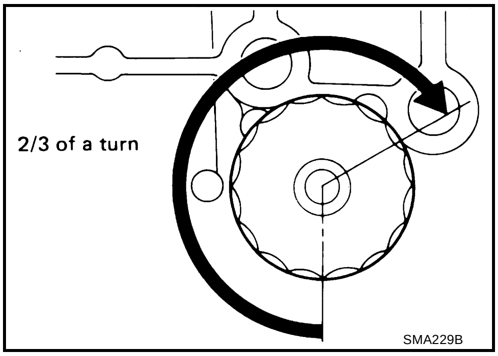
1. Remove foreign materials adhering to the oil filter installation surface.
2. Apply new engine oil to the oil seal contact surface of new oil filter.


SMA010

3. Screw oil filter manually until it touches the installation surface, then tighten it by 2/3 turn. Or tighten to the specification.

   Oil filter:

   : 17.6 N·m (1.8 kg-m, 13 ft-lb)



SMA229B

INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to MA-15, "Changing Engine Oil" .
2. Start the engine, and check there is no leaks of engine oil.
3. Stop the engine and wait for 10 minutes.
4. Check the engine oil level, and adjust the level. Refer to MA-15, "Changing Engine Oil" .

Changing Spark Plugs (Platinum-Tipped Type)

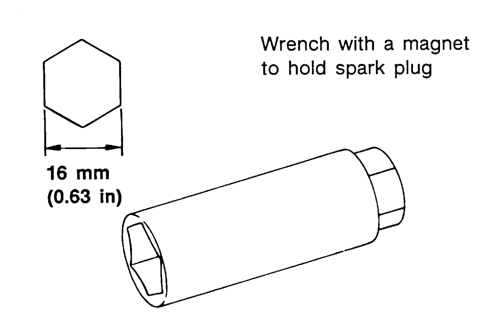
ALS000SB

REMOVAL

1. Remove engine cover. Refer to EM-16, "INTAKE MANIFOLD" .
2. Remove ignition coil. Refer to EM-27, "IGNITION COIL" .
3. Remove spark plug with a spark plug wrench (commercial service tool).

   CAUTION:

   Do not drop or shock it.



SEM294A

INSPECTION AFTER REMOVAL

Use standard type spark plug for normal condition.

Hot type spark plug is suitable when fouling occurs with standard type spark plug under conditions such as:

- Frequent engine starts
- Low ambient temperatures

Cold type spark plug is suitable when spark plug knock occurs with standard type spark plug under conditions such as:

- Extended highway driving
- Frequent high engine revolution

Make	NGK
Standard type	PLFR5A-11
Hot type	PLFR4A-11
Cold type	PLFR6A-11

Gap (Nominal) : 1.1 mm (0.043 in)

CAUTION:

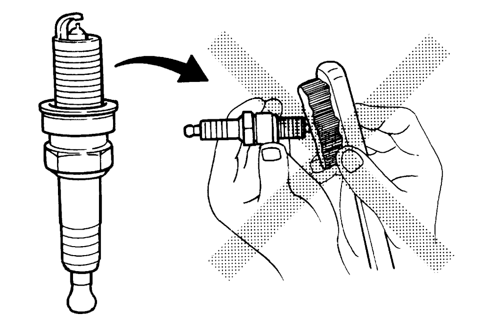
- **Do not drop or shock spark plug.**
- **Do not use wire brush for cleaning.**
- **If plug tip is covered with carbon, spark plug cleaner may be used.**

  Cleaner air pressure:

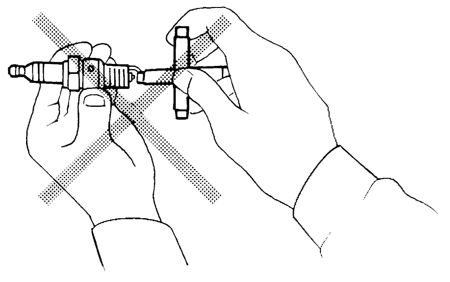
  Less than 588 kPa (6 kg/cm^2 , 85 psi)

  Cleaning time:

  Less than 20 seconds


SMA773C

- **Checking and adjusting plug gap is not required between change intervals.**



SMA806CA

INSTALLATION

Install in the reverse order of removal.

: 24.5 N·m (2.5 kg-m, 18 ft-lb)

Checking EVAP Vapor Lines

ALS000SC

1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.
   Refer to **EC-30, "EVAPORATIVE EMISSION SYSTEM"** **.**

CHASSIS AND BODY MAINTENANCE

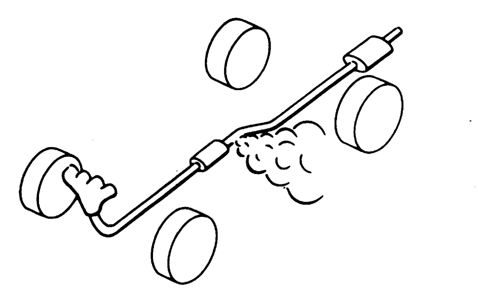
PFP:00100

Checking Exhaust System

ALS000SD

Check exhaust pipes, muffler and mounting for improper attachment, leaks, cracks, damage, chafing or deterioration.

- If anything is found, repair or replace damaged parts.

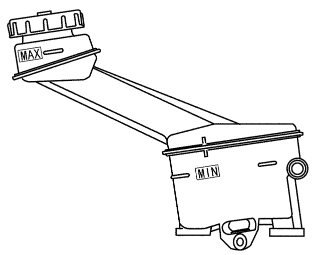


SMA211A

Checking Clutch Fluid Level and Leaks

ALS000TC

If fluid level is extremely low, check clutch system for leaks.

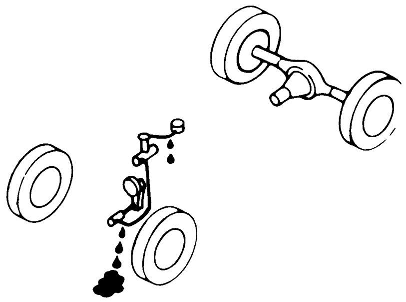


SFIA0066J

Checking Clutch System

ALS000TD

Check fluid lines and operating cylinder for improper attachment, cracks, damage, loose connections, chafing and deterioration.



SMA859

Checking M/T Oil

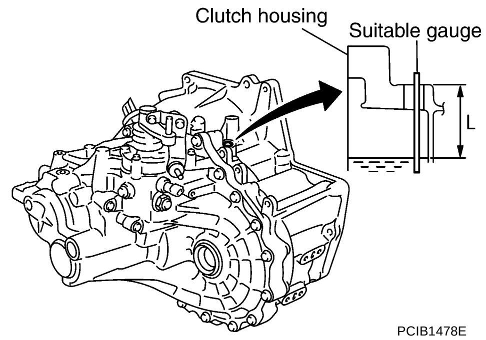
ALS000TE

Check for oil leakage.
(For details, refer to MT-11, "Checking M/T Oil" .)

Changing M/T Oil

ALS000TF

1. Drain oil from drain plug and refill with new gear oil.
   (For details, refer to MT-11, "Changing M/T Oil" .)
2. Check oil level.



PCIB1478E

Oil grade and viscosity:

Refer to MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS" .

Oil level "L": 168.0 - 174.0 mm (6.61 - 6.85 in)

Oil capacity (reference): Approx. 2.2 ℓ (2-3/8 US qt, 2 Imp qt)

Drain plug:

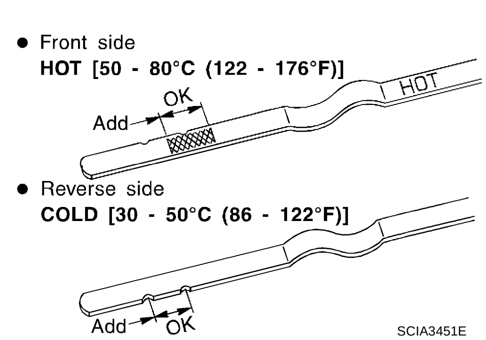
: 34.5 N·m (3.5 kg-m, 25 ft-lb)

CAUTION:
Do not reuse gasket.

Checking A/T Fluid

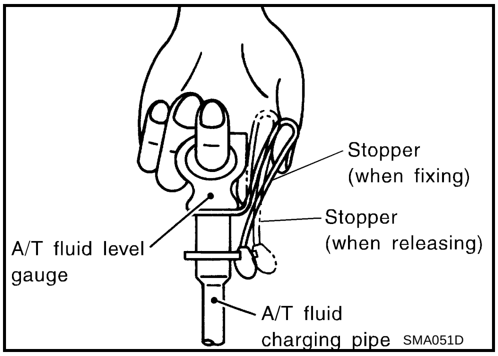
ALS000SE

1. Warm up engine.
2. Check for A/T fluid leakage.
3. Before driving, A/T fluid level can be checked at A/T fluid temperatures of 30 to 50°C (86 to 122°F) using "COLD" range on A/T fluid level gauge.



SCIA3451E

a. Park vehicle on level surface and set parking brake.
b. Start engine and move selector lever through each gear position. Leave selector lever in "P" position.
c. Check A/T fluid level with engine idling.
d. Remove A/T fluid level gauge and note reading. If level is at low side of either range, and ATF to the A/T fluid charging pipe.



SMA051D

CAUTION:
When wiping away the A/T fluid level gauge, always use lint-free paper, not a cloth one.

e. Re-insert A/T fluid level gauge into A/T fluid charging pipe as far as it will go.

CAUTION:
Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using a stopper attached.

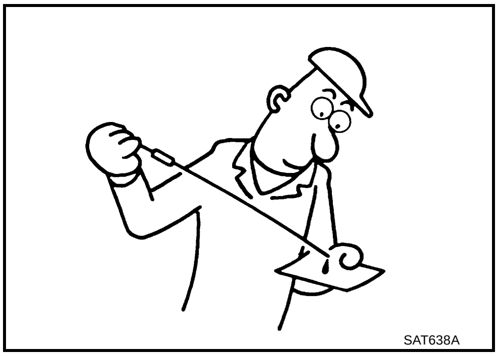
f. Remove A/T fluid level gauge and note reading. If reading is at low side of range, add A/T fluid to the A/T fluid charging pipe.

CAUTION:
Do not overfill.

4. Drive vehicle for approximately 5 minutes in urban areas.
5. Recheck A/T fluid level at A/T fluid temperatures of 50 to 80°C (122 to 176°F) using "HOT" range on A/T fluid level gauge.

CAUTION:
- **When wiping away the A/T fluid level gauge, always use lint-free paper, not a cloth one.**
- **Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using a stopper attached.**

6. Check A/T fluid condition.
   - If ATF is very dark or smells burned, checking operation of A/T. Flush cooling system after repair of A/T.
   - If ATF contains frictional material (clutches, bands, etc.), replace radiator and flush cooler line using cleaning solvent and compressed air after repair of A/T. Refer to CO-11, "RADIATOR" , CO-14, "RADIATOR (ALUMINUM TYPE)" .

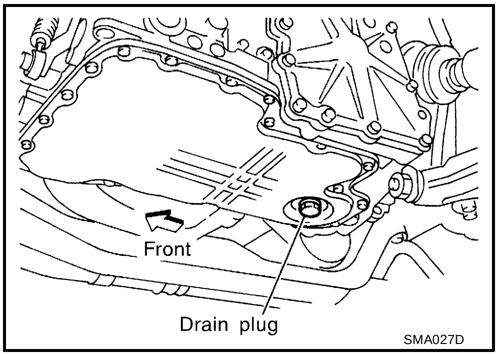

SAT638A

7. Install the removed A/T fluid level gauge in the A/T fluid charging pipe.

   CAUTION:
   Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using a stopper attached.

Changing A/T Fluid

ALS000SF



SMA027D

1. Warm up ATF.
2. Stop engine.
3. Drain ATF from drain hole and refill with new ATF. Always refill same volume with drained fluid.

   CAUTION:
   Do not reuse drain plug gasket.

   Fluid grade:

   Refer to MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS" .

   Fluid capacity (With torque converter):

   Approx. 8.5 ℓ (9 US qt, 7-1/2 Imp qt)

   Drain plug:

   : 34 N·m (3.5 kg-m, 25 ft-lb)

4. Run engine at idle speed for 5 minutes.
5. Check A/T fluid level and condition. Refer to AT-16, "Checking A/T Fluid" . If ATF is still dirty, repeat steps 2 through 5.

Checking Transfer Oil

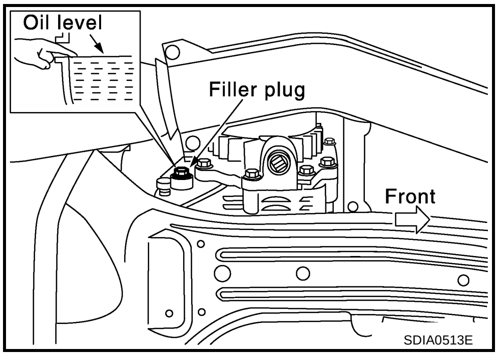
ALS000SG

Check for oil leakage and oil level.
(For details, refer to TF-9, "Changing Transfer Oil" .)

CAUTION:
Do not start engine while checking oil level.

Filler plug:

: 14.7 N·m (1.5 kg-m, 11 ft-lb)



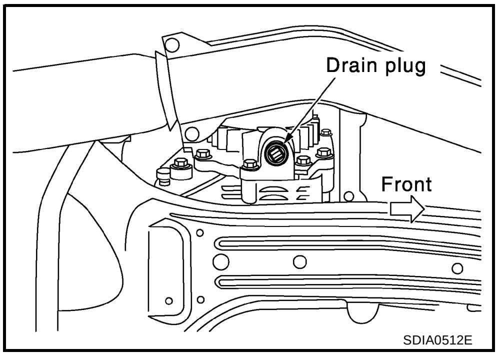
SDIA0513E

Changing Transfer Oil

ALS000SH

CAUTION:
When draining oil, protect exhaust tube flange with cover.

1. Drain oil from drain plug and refill with new gear oil.
   (For details, refer to TF-9, "Changing Transfer Oil" .)
2. Check oil level.
   CAUTION:
   Carefully fill the oil. (Fill up for Approx. 3 minutes.)



Oil grade and viscosity:

Refer to MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS" .

Oil capacity:

: Approx. 0.31 ℓ (5/8 US pt, 1/2 Imp pt)

Drain plug:

: 14.7 N·m (1.5 kg-m, 11 ft-lb)

Filler plug:

: 14.7 N·m (1.5 kg-m, 11 ft-lb)

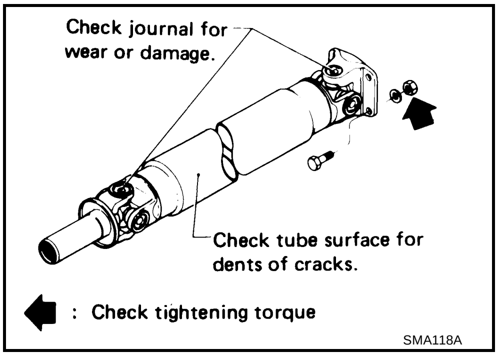
Checking Propeller Shaft

ALS000SI

Check propeller shaft for damage, looseness or grease leakage.

Tightening torque:

Refer to PR-3, "REAR PROPELLER SHAFT" .



Checking Differential Gear Oil

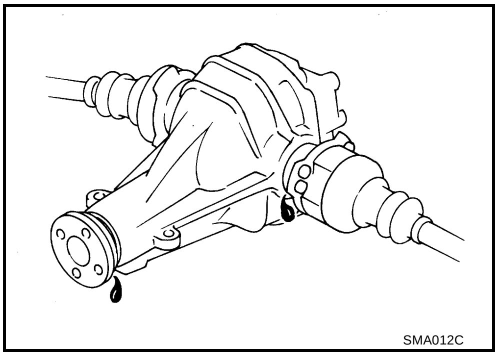
ALS000SJ

Check for oil leakage and oil level.
(For details, refer to RFD-8, "Checking Differential Gear Oil" .)

Filler plug:

: 34.5 N·m (3.5 kg-m, 25 ft-lb)

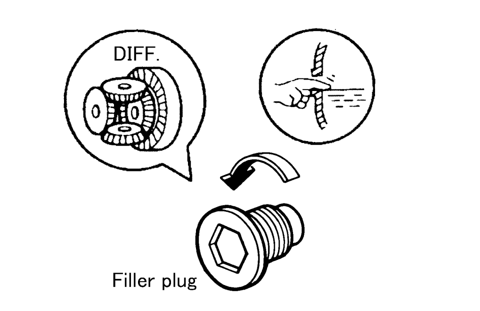
CAUTION:
Do not reuse gasket.



Changing Differential Gear Oil

ALS000SK

1. Drain oil from drain plug and refill with new gear oil.
   (For details, refer to RFD-8, "Changing Differential Gear Oil" .)
2. Check oil level.



SDIA1151E

Oil grad and Viscosity:

Refer to MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS" .

Capacity:

0.55 ℓ (1-1/8 US pt, 1 Imp pt)

Drain plug:

: 34.5 N·m (3.5 kg-m, 25 ft-lb)

Filler plug:

: 34.5 N·m (3.5 kg-m, 25 ft-lb)

CAUTION:
Do not reuse gaskets.

Balancing Wheels (Bonding Weight Type)

ALS000SL

REMOVAL

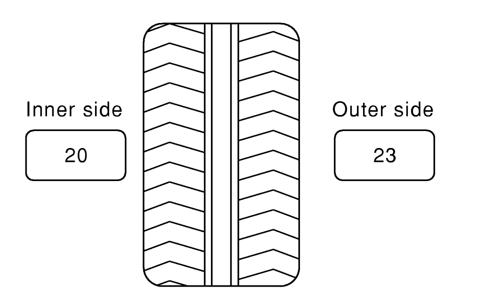
1. Remove inner and outer balance weights from the road wheel.
   CAUTION:
   Be careful not to scratch the road wheel during removal.
2. Using releasing agent, remove double-faced adhesive tape from the road wheel.
   CAUTION:
   - **Be careful not to scratch the road wheel during removal.**
   - **After removing double-faced adhesive tape, wipe clean traces of releasing agent from the road wheel.**

WHEEL BALANCE ADJUSTMENT

- If a tire balance machine has adhesion balance weight mode settings and drive-in weight mode setting, select and adjust a drive-in weight mode suitable for road wheels.

1. Set road wheel on wheel balancer using the center hole as a guide. Start the tire balance machine.
2. When inner and outer unbalance values are shown on the wheel balancer indicator, multiply outer unbalance value by 5/3 to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value above and install it to the designated outer position of, or at the designated angle in relation to the road wheel.
   CAUTION:
   - **Do not install the inner balance weight before installing the outer balance weight.**
   - **Before installing the balance weight, be sure to clean the mating surface of the road wheel.**

   Indicated unbalance value × 5/3 = balance weight to be installed
   Calculation example:
   23 g (0.81 oz) × 5/3 = 38.33 g (1.35 oz) = 40 g (1.41 oz) balance weight (closer to calculated balance weight value)
   Note that balance weight value must be closer to the calculated balance weight value.
   Example:
   37.4 = 35 g (1.23 oz)
   37.5 = 40 g (1.41 oz)



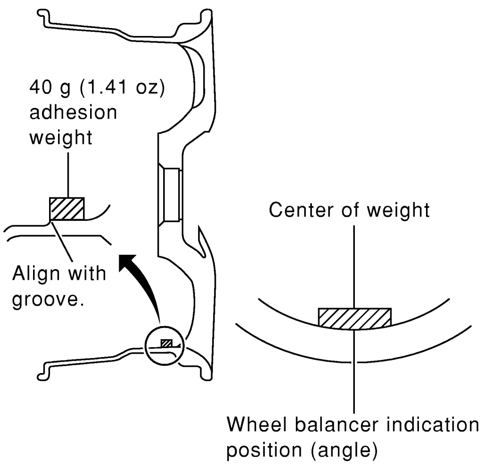
SMA054D

a. Install balance weight in the position shown in the figure at right.

b. When installing balance weight to road wheels, set it into the grooved area on the inner wall of the road wheel as shown in the figure so that the balance weight center is aligned with the wheel balancer indication position (angle).

CAUTION:

- **Always use genuine Nissan adhesion balance weights.**
- **Balance weights are unreusable; always replace with new ones.**
- **Do not install more than three sheets of balance weight.**

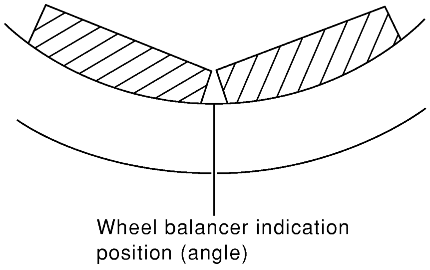


SEIA0166E

c. If calculated balance weight value exceeds 50 g (1.76 oz), install two balance weight sheets in line with each other (as shown in the figure).

CAUTION:

Do not install one balance weight sheet on top of another.



SMA056D

3. Start wheel balancer again.
4. Install drive-in balance weight on inner side of road wheel in the wheel balancer indication position (angle).

CAUTION:

Do not install more than two balance weights.

5. Start wheel balancer. Make sure that inner and outer residual unbalance values are 10 g (0.35 oz) each or below.
   - If either residual unbalance value exceeds 10 g (0.35 oz), repeat installation procedures.

Wheel balance (Maximum allowable unbalance):

Maximum allowable unbalance	Dynamic (At rim flange)	Less than 10 g (0.35 oz) (one side)
	Static (At rim flange)	Less than 20 g (0.70 oz)

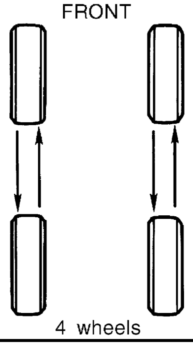
Tire Rotation

ALS000SM

Do not include the T-type spare tire when rotating the tires.

Wheel nuts

: 113 N·m (12 kg-m, 83 ft-lb)

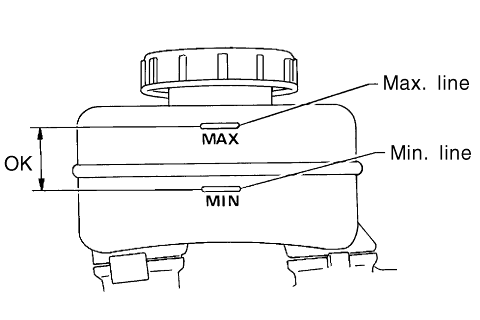


SMA829C

Checking Brake Fluid Level and Leaks

ALS000SN

- If fluid level is extremely low, check brake system for leaks.

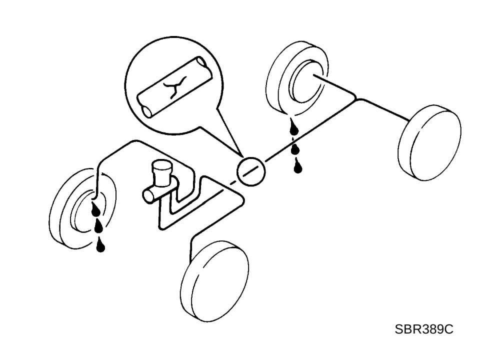


SBR451D

Checking Brake Lines and Cables

ALS000SO

- Check brake fluid lines and parking brake cables for improper attachment, leaks, chafing, abrasions, deterioration, etc.

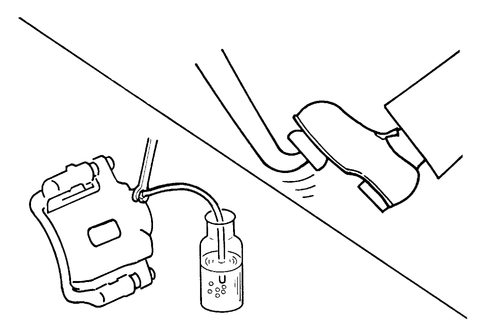


SBR389C

Changing Brake Fluid

ALS000SP

1. Drain brake fluid from each bleed valve.
2. Refill until new brake fluid comes out from each bleed valve.
   Use same procedure as in bleeding hydraulic system to refill brake fluid.
   Refer to BR-10, "Bleeding Brake System" .
   - Refill with recommended Genuine Brake Fluid or equivalent DOT 3 (US FMVSS No. 116).
     Refer to MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS" .
   - Never reuse drained brake fluid.
   - Be careful not to splash brake fluid on painted areas.



SBR419C

Checking Disc Brake

ALS000SQ

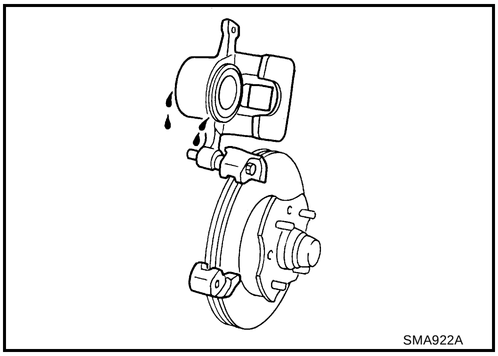
ROTOR

Check condition, wear, and damage.

	Front	Rear
Brake model	AD31VD	AD9VA
Standard thickness	28.0 mm (1.102 in)	16.0 mm (0.630 in)
Maximum runout	0.06 mm (0.0024 in)	0.1 mm (0.0039 in)
Minimum thickness (Wear limit)	26.0 mm (1.024 in)	14.0 mm (0.551 in)

CALIPER

- Check for leakage.

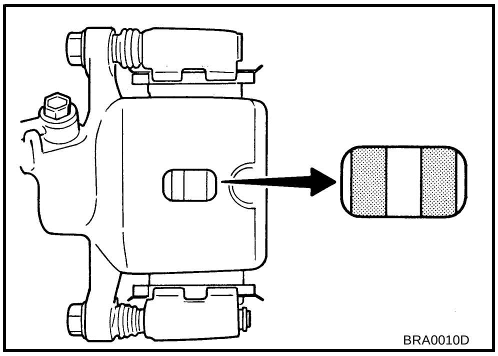


SMA922A

PAD

- Check for wear or damage.

Brake model	AD31VD	AD9VA
Standard thickness	11.0 mm (0.433 in)	8.5 mm (0.335 in)
Minimum thickness (Wear limit)	2.0 mm (0.079 in)	2.0 mm (0.079 in)



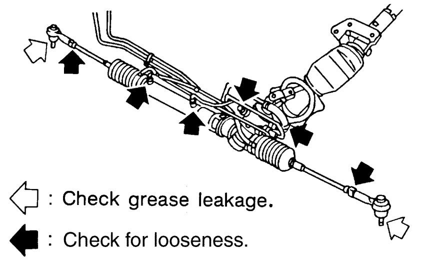
BRA0010D

Checking Steering Gear and Linkage

ALS000SR

STEERING GEAR

- Check gear housing and boots for looseness, damage and grease leakage.
- Check connection with steering column for looseness.



SLIA0014E

STEERING LINKAGE

Check ball joint, dust cover and other component parts for looseness, wear, damage and grease leakage.

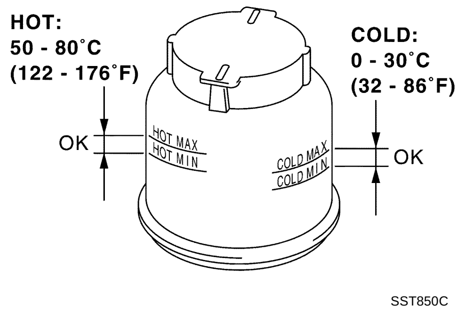
Checking Power Steering Fluid and Lines

ALS000SS

Check fluid level in reservoir tank with engine off.
Use “HOT” range at fluid temperatures of 50 to 80°C (122 to 176°F) or “COLD” range at fluid temperatures of 0 to 30°C (32 to 86°F).

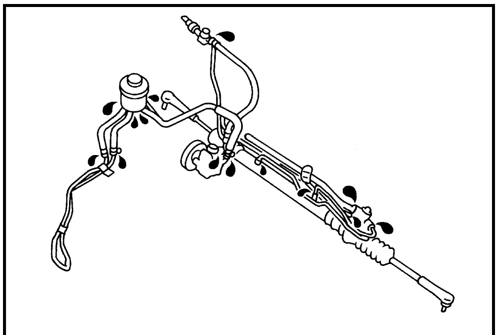
CAUTION:

- **Do not overfill.**
- **Recommended fluid is Genuine NISSAN PSF or equivalent. Refer to** **MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS"** **.**



SST850C

- **Check lines for improper attachment, leaks, cracks, damage, loose connections, chafing and deterioration.**
- **Check rack boots for accumulation of power steering fluid.**



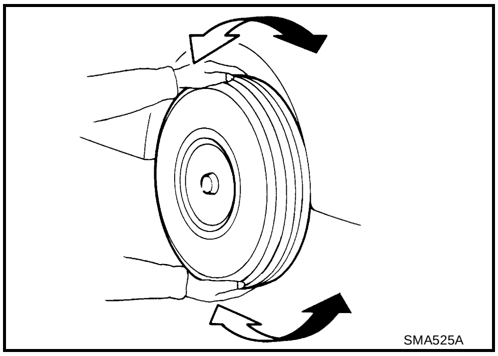
SST851C

Axle and Suspension Parts

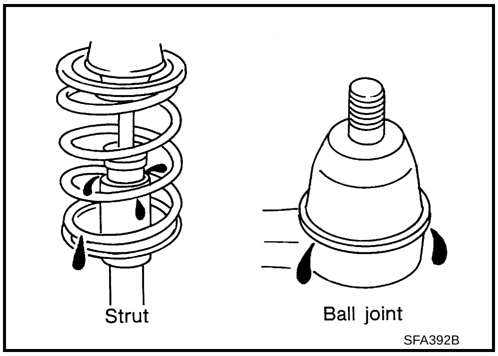
ALS000ST

Check front and rear axle and suspension parts for excessive play, cracks, wear or other damage.

- Shake each wheel to check for excessive play.
- Check wheel bearings for smooth operation.
- Check axle and suspension nuts and bolts for looseness.
- Check strut (shock absorber) for oil leakage or other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage.



SMA525A

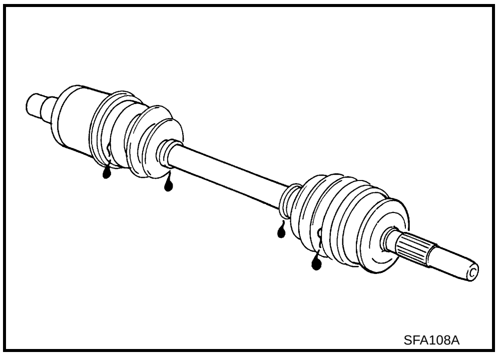


SFA392B

Drive Shaft

ALS000SU

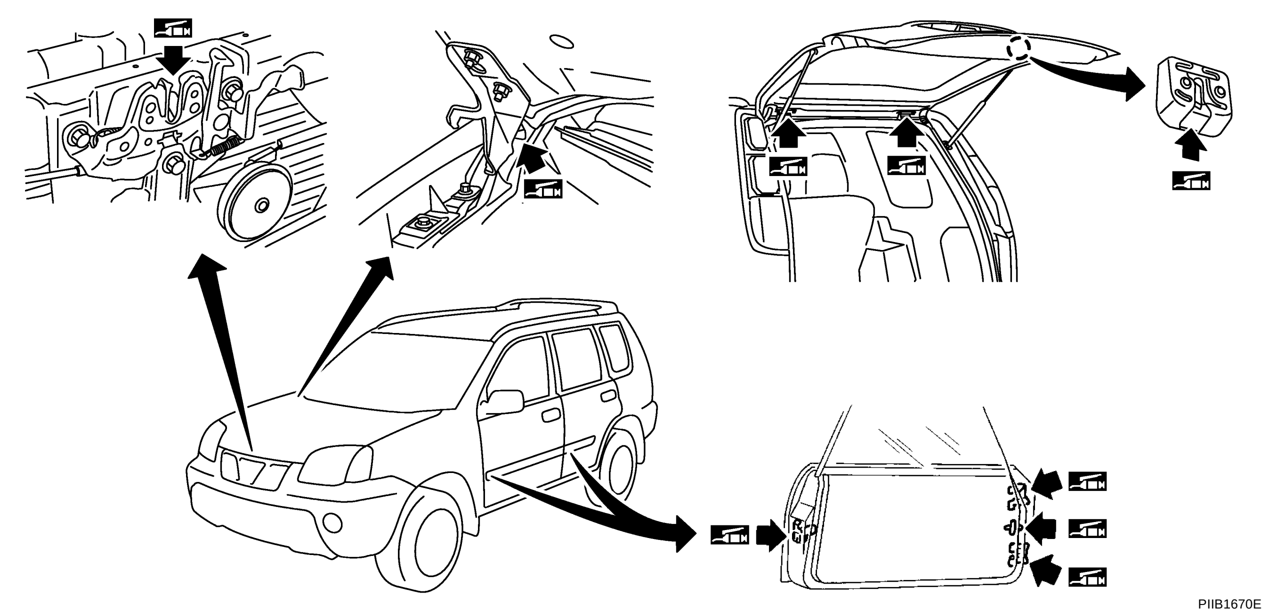
Check boot and drive shaft for cracks, wear, damage and grease leakage.



SFA108A

Lubricating Locks, Hinges and Hood Latch

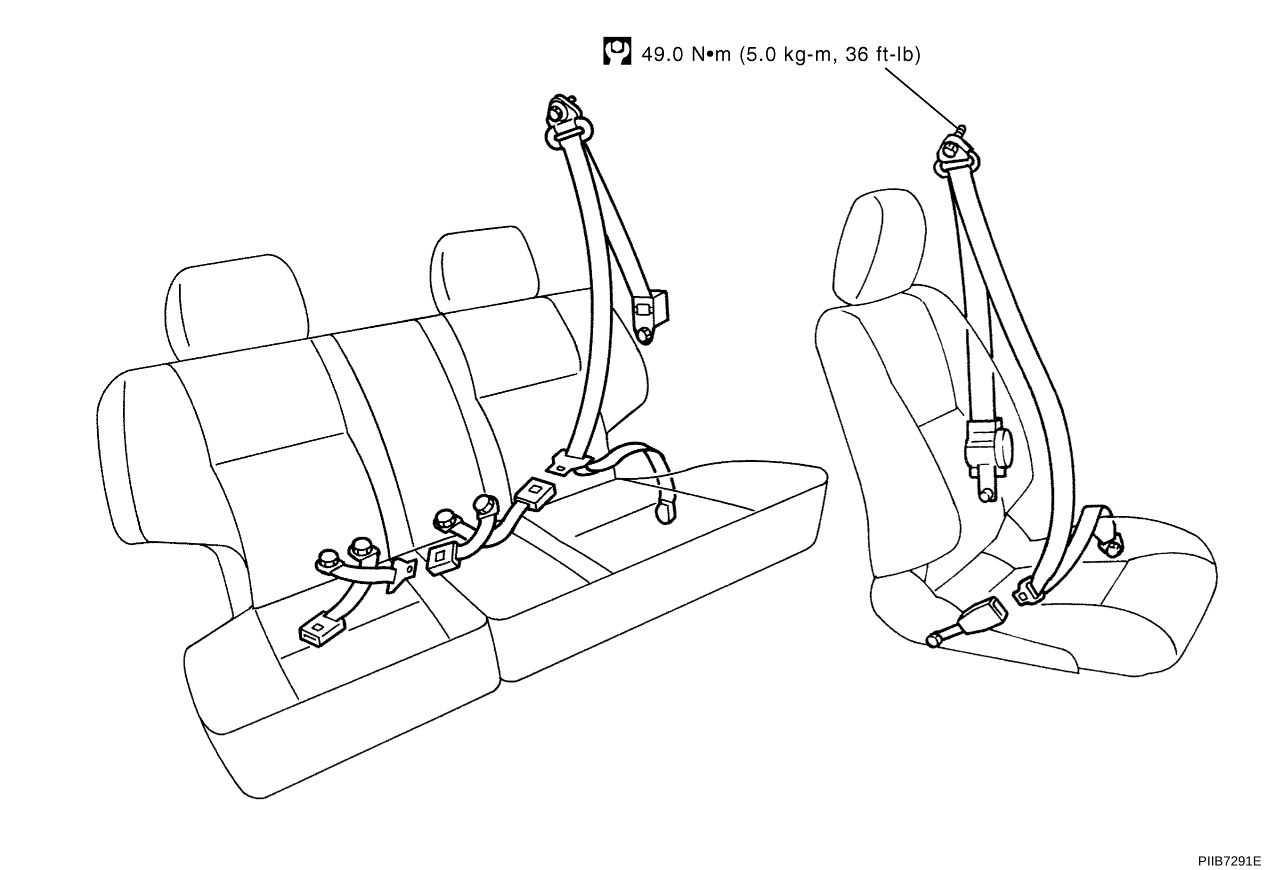
ALS000SV



PIIB1670E

Checking Seat Belt, Buckles, Retractors, Anchors and Adjusters

ALS000ZY



PIIB7291E

CAUTION:

- **After any collision, inspect all seat belt assemblies, including retractors and other attached hardwares (I.e. anchor bolt, guide rail set). Nissan recommends to replace all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision.**
  Also inspect seat belt assemblies not in use during a collision, and replace if damaged or improperly operating.
  Seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision where the driver and passenger air bags are deployed.
- **If any component of seat belt assembly is questionable, do not repair.**

Replace as seat belt assembly.

- **If webbing is cut, frayed, or damaged, replace belt assembly.**
- **Never oil tongue and buckle.**
- **Use a genuine NISSAN seat belt assembly.**

For details, refer to SB-6, "Seat Belt Inspection" in SB section.

- Check anchors for loose mounting
- Check belts for damage
- Check retractor for smooth operation
- Check function of buckles and tongues when buckled and released

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

Standard and Limit

ALS000SX

BELT DEFLECTION AND TENSION

Tension of drive belt	Auto adjustment by auto-tensioner

ENGINE COOLANT CAPACITY (APPROXIMATE)

Unit: ℓ (US qt, Imp qt)

Coolant capacity (With reservoir tank at “MAX” level)	7.1 (7-1/2, 6-1/4)
Reservoir tank coolant capacity (At “MAX” level)	0.7 (3/4, 5/8)

RADIATOR

Unit: kPa (kg/cm^2 , psi)

Cap relief pressure	Standard	78 - 98 (0.8 - 1.0, 11 - 14)
	Limit	59 (0.6, 9)
Leakage test pressure		157 (1.6, 23)

ENGINE OIL CAPACITY (APPROXIMATE)

Unit: ℓ (US qt, Imp qt)

Drain and refill	With oil filter change	3.9 (4-1/8, 3-3/8)
	Without oil filter change	3.5 (3-3/4, 3-1/8)
Dry engine (Overhaul)		4.5 (4-3/4, 4)

SPARK PLUG (PLATINUM-TIPPED TYPE)

Make	NGK
Standard type	PLFR5A-11
Hot type	PLFR4A-11
Cold type	PLFR6A-11
Gap (nominal)	1.1 mm (0.043 in)

WHEEL BALANCE

Maximum allowable unbalance	Dynamic (At rim flange)	Less than 10 g (0.35 oz) (one side)
	Static (At rim flange)	Less than 20 g (0.71 oz)